

Simple Interest

-calculated on amount
invested ONLY

$$I = Prt \quad \text{Where;}$$

I = the interest
earned

P = principal invested

r = annual interest rate

t = time in years

Jan 10-9:42 AM

GICS guaranteed investment certificates

Jessica has \$4000 to invest in a GIC which pays 3.5%/a over 5 years.
Calculate the interest she will earn.

$$I = ? \quad I = Prt$$

$$P = 4000$$

$$r = 0.035$$

$$t = 5$$

Substitute

$$I = (4000)(0.035)(5) \\ = \$700.00$$

Jessica has earned \$700 in interest over the 5 years.

Jan 10-10:12 AM

GICS

guaranteed investment
certificates

Hannah has \$4000 to
invest in a GICs paid
3.5%/a over 5 years.
compounded annually

$$A = P(1+i)^n \quad \text{A: annuity}$$

$$= (4000)(1.035)^5 \quad \text{P: principal}$$

$$= 4000(1.035)^5 \quad \text{invested}$$

$$= 4000(1.1876) \quad \text{i: interest}$$

$$= 4750.75 \quad \text{rate}$$

not at times
it gets complicated

The interest earned is
\$750.75. Compounded vs Simple
Interest earns \$50.75 more over
the 5 yr term

Jan 10-10:12 AM

Ivy invests \$5000.00
in an account at 5%/a
compounded monthly. What
is the investment worth
after 6 years?

$$A = P(1+r)^n \quad A = ?$$

$$P = \$5000$$

$$A = 5000(1 + 0.05/12)^{72} \quad r = 0.05/12$$

$$A = 5000(1.004167)^{72} \quad = 0.004167$$

$$A = 5000(1.342) \quad n = 6 \times 12 = 72$$

$$A = 6712.92$$

Jan 10-10:35 AM

Compounding Periods

Daily = 365

Monthly = 12

Annually = 1

Weekly = 52

Biweekly = 26

Semiannually = 2

Quarterly = 4

Jan 10-10:43 AM

p459-461

#26, 4, cde, 7, 9, 11

p468-470 2, 4, 3, 18

p476-478 2, 6, 8, 11, 12

Jan 10-10:46 AM

Opener

A donor gives \$50 000 to the high school he graduated from. The amount must be invested for 3 years, and the accumulated interest will be used to buy books for the library. If the money earns 7.75%/a compounded monthly, how much will be available to buy books?

$$A = P(1+r)^n$$

May 11-8:00 AM

Opener

A donor gives \$50 000 to the high school he graduated from. The amount must be invested for 3 years, and the accumulated interest will be used to buy books for the library. If the money earns 7.75%/a compounded monthly, how much will be available to buy books?

$$A = P(1+i)^n$$

$A = ?$
 $P_0 = 50\,000$
 $i = 0.0775/12 = 0.00646$
 $n = 3 \times 12 = 36$
 $A = 50\,000(1.00646)^{36}$
 $A = 50\,000(1.261)$
 $A = 63\,044.14$

There is \$13 044.14 to buy books at the end of 3 years.

May 11-8:00 AM

$$A = P(1+i)^n$$

A = Annuity
 P = Principle
 i = Interest rate
 n = # of compounding times

Solve for the value of P

$$P = \frac{A}{(1+i)^n}$$

Present Value of an investment to yield a certain amount of money

May 11-8:03 AM

Ex 3 p474

Tony has \$3000 in his savings account. He intends to buy a laptop computer and printer and invest the remainder for 2 years, compounding monthly at an annual interest rate of 3%. He wants to have \$2000 in his account 2 years from now. How much can he afford to spend on the laptop?

May 11-8:07 AM

Ex 3 p474

Tony has \$3000 in his savings account. He intends to buy a laptop computer and printer and invest the remainder for 2 years, compounding monthly at an annual interest rate of 3%. He wants to have \$2000 in his account 2 years from now. How much can he afford to spend on the laptop?

May 11-8:07 AM

$$P = \frac{A}{(1+i)^n}$$

$A = \$2000$
 $P = ?$
 $i = 0.03/12 = 0.0025$
 $n = 2 \times 12 = 24$

$$P = \frac{2000}{(1+0.0025)^{24}}$$

$$P = \frac{2000}{(1.0025)^{24}}$$

$$P = \frac{2000}{1.06175...}$$

$$P = 1883.57$$

$$\$3000 - 1883.57 = 1116.33$$

He can afford to spend \$1116.33 on a laptop and printer.

May 11-10:03 AM

p477 & 6-13

14 diagram p 478 renting formulas

May 11-8:10 AM

May 17-10:34 AM